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CENTRAL INTELLIGENCE AGENCY

## INFORMATION REPORT

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COUNTRY USSR (Estonia/Latvia)

SUBJECT Description of Roads

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DATE DISTR. 5 APR 54

NO. OF PAGES 3

NO. OF ENCLS.

SUPP. TO  
REPORT NO.

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1. Estonian highways were built for light horse traffic only, and before 1920 were maintained by the peasants by gravelling twice a year. They were predominantly gravel roads with a small percentage of water-bound macadam and cobble paving. In general they were quite crooked. During the period 1920-25 they were in rather bad condition, with ruts and pools of water on the traveled way. Many of the roads were not trafficable for heavy motor vehicles in the wet season. Improvement began in 1925 when the government took over the construction and maintenance of the principal highways. These roads were gravelled with coarse crushed rock which was rolled or driven in, forming a stronger base for heavy traffic. A permanent cross slope was provided by graders. This served to keep the roads dry in the wet season. The crooked portions were straightened and the old bridges were replaced with new reinforced concrete bridges built for a 15-25 ton load. All of the more important highways were kept clear of snow by the use of snow shields and plows. However, gravel remained the predominant surface, since light motor traffic did not justify the construction of expensive concrete or asphalt surfaces, and cheaper bituminous surfacing could not be used due to the existence of horse-drawn traffic, which rapidly destroys this type of surface. Asphalt surfacing (mostly bituminous macadam) was used on approaches to larger cities, and on highways through cities.
2. All state highways were provided with international traffic signs, and turnoffs with place names. First class roads, and the more important second class roads, were provided with drainage ditches where necessary. Important highways were marked with wooden posts in summer and wooden poles in winter. Less important roads were marked with tree branches in the winter. In wooded areas the forest was supposed to be removed for at least eight meters from the edge of the road, but this requirement was not always fulfilled. The most common traffic on Estonian highways consisted of horse-drawn vehicles. It was not difficult for persons unfamiliar with Estonia to orient themselves on the highways since crossroads and turnoffs were provided with road names.

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3. Technically, Estonian highways were divided into three categories:

(a) First class highways connecting major cities (county or district centers). Their total width was eight meters, with a six-meter travelled way and a one-meter shoulder on each side.

(b) Second class highways connecting smaller cities. These had a total width of six meters, with a 4.5 meter travelled way and shoulders 0.75 meters wide.

(c) Third class roads designed to handle local traffic. The above-mentioned widths were required for new roads or improved portions. In some cases the old roads were narrower than the class standards. Only the travelled ways were paved, the shoulders were gravelled. On gravel roads there was no surface difference between the travelled way and the shoulders, but base rock was provided on the travelled way only. First class roads were usually built on some embankment in wet areas, and therefore were better drained and more independent of weather conditions in the wet season.

4. The first class highway Tallinn-Marjamaa-Pärnu was a good, improved road. All of the crooked parts had been straightened and provided with base rock. From Tallinn to the turnoff for Haapsalu the road was made virtually straight, with a total width of ten meters, and a seven-meter travelled way (an exception). It had a bituminous macadam travelled way through Marjamaa and Jaagupe [sic] and for five kilometers on the approach to Pärnu. (The straightened sections have not been so marked on the maps in "Eesti Maanteede Kaart, 1938," an official book of Estonian road maps). The subsoil of this road was good and there was some embankment on most of the road, which made snow removal easy.

5. The second class road Rapla-Marjamaa had fairly good alignment from Rapla to Koikse [sic], and had a cobble pavement. It was on a low embankment but was quite narrow (less than six meters). From Koikse to Argita [sic] there was no embankment, it was too low in wet places, and it was difficult to make a cross slope on the driveway. Therefore ruts showed up in the wet season, making it unfit for motor vehicles. Marjamaa and Rapla were not large centers and therefore the road was of secondary importance.

6. Since Paldiski had been made into an important USSR naval and submarine base, a project was initiated in 1940 to replace the old narrow and crooked road to the town. The new road between Keila and Paldiski generally followed the old one but it had longer straight sections and smoother curves. From Keila east it generally followed the second class road and joined the Tallinn-Pärnu highway at Jalgimae [sic]. The road was to have a seven-meter asphalt macadam travelled way on base rock, with 1.5 meter gravelled shoulders. The construction of the Jalgimae-Keila part was started in the spring of 1941 but was interrupted in July by World War II. Preliminary surveys were also made in 1940 for the extension of this road from Jalgimae to the Tallinn-Narva highway, thus avoiding Tallinn.

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7. A preliminary survey was made in 1940 for the Tallinn-Johvi-Narva-Leningrad highway

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8. Main highways generally did not pass through swampy areas, but went around them on mineral soil. In exceptional cases the old roads had been built on higher embankments, the weight of which had compressed the swampy soil, or had pressed it away from under the embankment. On new parts of highways the swampy soil was replaced with mineral soil.

9. Estonian highways satisfied the requirements of light Estonian motor traffic. However, the situation changed in 1941 when the Germans occupied Estonia and the highways had to supply the northeastern part of the German front. The following roads were the principal supply routes:

(a) The old Czarist Russian army road from Pskov to Riga completed at the beginning of World War I. This road, which went through the southeastern corner of Estonia via Pankjaviitea [sic] and Mae Murati [sic], Latvia, was of no importance to

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25X1 Estonia and was considered a second class highway. It was built for horse-drawn traffic and was fairly broad (more than two lanes). It had water-bound macadam paving without base rock. It was low in some places and occasionally showed frost heaves and cracks, but [ ] it served the German front without interruption. It was provided with permanent work crews to patch the paving, as were all militarily important highways. It was called a "rollbahn" by the Germans, and was kept clear of snow in winter.

25X1 (b) The Valga-Tartu-Maarja Magdalena-Torma-Mustvee-Johvi-Narva first class highway. This was a predominantly gravelled road which was cleared in winter. It showed some frost damage north of Lake Peipus, between Ranna Langerja and Sõlliku (low), and between Konju and Sillamäe, near Narva Bay. Otherwise [ ] it was all right.

(c) The Tallinn-Paide-Põltsamaa-Tartu first class highway. This too was predominantly gravelled and was kept clear in winter. There were no major difficulties.

(d) The Tallinn-Haapsalu first class highway. Also cleared in winter and without major difficulties.

(e) The Risti Virtsu-Kuresaare first class highway. Also cleared in winter and without major difficulties. (In summer through traffic used ferries and in winter went over the ice).

(f) The Tallinn-Marjamaa-Pärnu-Uulu first class, and the Uulu-Tahkuranna-Ikla-Riga second class highway. Also cleared in winter and without major difficulties. The latter road passes through a more wooded area.

10. The other Estonian highways were not considered strategically important by the Germans. They were used in the summer, but were not cleared in winter when there was heavy snow. Good gravel was available in most parts of Estonia. Where it was not available, crushed rock replaced it. Under the Germans gasoline for maintenance work was in short supply, but those gravel roads which were kept up were able to handle above-average traffic loads. Bridges were strong enough for the heaviest tanks, but most of them were destroyed by the retreating Germans.
11. In general the maximum grade allowed on first and second class highways was five per cent, but there were some exceptions in the hilly southern part of Estonia. The cross slope on gravel roads was four per cent. Onesided slope and superelevation was provided on sharp curves. Improved gravel roads were generally considered satisfactory for a total load of up to four hundred tons in twenty-four hours. On gravel roads with base rock this figure was in some cases six hundred tons. With heavy traffic a good-sized stock of road construction and maintenance equipment is necessary, such as stonecrushers, graders, trucks, snowplows, etc, as well as ample fuel oil and permanent work crews.
12. Latvian highways were generally similar to those in Estonia. Most roads are gravelled, with some water-bound macadam (called soseja) and cobble paving (called prugi). Hard surfaced roads were not economically justified by the light traffic.

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